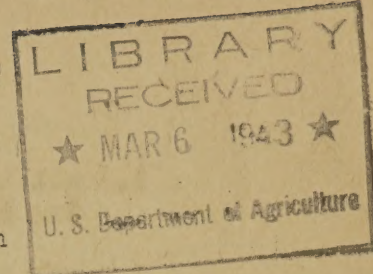


ASPECTS OF THE 1942-43 NATION-WIDE FARM-EQUIPMENT  
CONSERVATION PROGRAM 1/

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Consideration of the aspects of the 1942-43 nation-wide equipment-conservation program starts with the fact that we are at war. A year ago our country entered this war in defense of freedom and democracy. A year ago yesterday, Axis invaders, bent on world conquest, attacked Pearl Harbor while proffering proposals for amity in Washington. Our military might is now in this fight to win, supported by our unequal industrial strength and vitality, and a self-reliant agriculture producing the Food for Freedom which will also "write the peace."

Secretary Wickard has said the "United Nations" strategy calls for the use of food as a weapon of liberation to build ever-increasing power against the Axis." America next year, in addition to meeting domestic requirements, must supply at least one-fourth of its expected production to a United Nations' pool to feed military forces and civilians. This is double the amount that went into this year's pool. The agricultural war products, of course, are not limited to food. The goals call for sharp increases in the output of meats, dairy and poultry products, peanuts for oil, corn for feed, long-staple cotton, dry beans, peas and potatoes. Reduced acreages of wheat, short-staple cotton and other crops, of which present supplies are large, are requested in order that such land and the labor involved may be released for more essential products.

Farmers face a war task in 1943 to exceed the record-breaking production of this year with less labor, machinery, and supplies. Farmers no doubt will work harder in 1943 but, in return, will probably receive the largest agricultural income in the history of this Nation.

With reference to farm labor, Raymond C. Smith 2/ made the following outlook statement in October:

"If present trends continue, agriculture probably will lose a million workers from its labor force between July 1, 1942 and July 1, 1943. By October 1, 1943, the end of the harvest season, the prospective loss will amount to 1,300,000 workers. At the same time, needed agricultural production next year would require 200,000 more workers than were available in 1942. To meet these needs to the full, next year we would have to recruit 1 1/2 million new workers."

He estimates that if this is done, "the 12,200,000 agricultural working force on October 1, 1943, would be constituted as follows:

- 9.1 million persons over 14 years of age living on farms.
- (About 20 percent of this number would be women, and about 20 percent of all farm women would be working in agriculture.)

1/ Presented at the fall meeting of the American Society of Agricultural Engineers, Chicago, Ill., December 8, 1942.

Distribution.--To State extension directors; State, assistant State, and district agricultural agents; extension agricultural engineers; and heads of college departments of engineering.



1.4 million persons who do not live on farms but who will be working in agriculture.

1.0 million persons living on farms working chiefly at nonagricultural work who will do some farm work.

.7 million children under 14 years of age."

He adds to this estimate, "But there is also another important source of farm labor. This is the reservoir of underemployed farm operators who, because of limited land, limited operating capital, lack of knowledge, or for other reasons, are producing very little for the market. About 2 million farms, or one-third of those reported in the 1940 census, reported gross incomes of less than \$400. About half of the production on these farms was consumed on the farm and, on the average, these farms sent only about \$100 worth of products to the market. This third of the farms produced only about 3 percent of the marketed crops. There are also many underemployed farm operators in the middle third, those who reported gross incomes between \$400 and \$1,000, and who contributed only 13 percent of marketed crops."

This statement discloses, in addition to the imminence and magnitude of the farm labor problem, two important facts relating to the conservation of equipment: First, the recruitment will come from persons who are inexperienced in the use of farm machinery and equipment; second, the agricultural production load of the Nation is carried principally by one-third of the farms, that is, one-third of the farms produce 84 percent of the marketed crops. With reference to the first factor, it is obvious that recruits, even those who are farm-reared, will have to be taught by the farmers using their services to do new farm tasks which involve success in the crop or other farm practices, skill and conservation in the operation of machines, and the safety of persons and protection of property from accidental damage.

Farming tasks and chores change continually with the seasons and are usually done without immediate supervision. This is especially true of the operation of modern field machinery. And, since no 2 years are alike in weather, marketing, and management, even a year of experience does not develop the dependability of skill, independent judgment, and knack of handling crops and livestock which is possessed by the skilled farm workers who go into military service or industrial employment.

The agricultural colleges, vocational agricultural schools, and the cooperative extension services are willing and able to assist farmers with training farm-labor recruits. And, fortunately, this need for training in the efficient use, care, and protection of machines and in the safety of operators, especially with reference to tractors and other power and electrical equipment, is a matter already recognized widely as of prime importance by the manufacturers and dealers interested in the use and conservation of farm implements, as well as by the public educational agencies.

The second factor, namely, that one-third of the farms produce 84 percent of the marketed agricultural products, indicates the farms on which both labor and machinery scarcity will be felt most acutely on the farm front.



Probably there will be material increases in production among the other two-thirds of the farms. In fact, the goals on many small farms can be increased more than average because of improved markets. But these smaller farms also have contributed heavily of their manpower to war service and work, and their size or other limitations still will leave the burden of production on the 2 million operators of larger farms who must employ capable labor and who use the world's best agricultural equipment. Some of the most suitable laborers for these farms can be obtained from the small farms, and this is being done now in Wisconsin and Ohio. It is an efficiency move on the food front which merits the intelligent support of agricultural engineers.

The factors we have so far considered as determining the need for a nation wide program on farm-equipment conservation are, the war for freedom, the role of food as a weapon, the utilization and recruitment of farm labor, and the productive capacities of the farms of our country. There are other factors having important bearing on the program, such as the transportation situation and the general control and balancing of the national war production effort. It will suffice, however, to recognize here that you are familiar with the governmental provisions for control of scarce materials. Last year, you discussed, at the meeting of this society and at an extension conference following it, a program to aid farmers in coping successfully with the limitations on the production and sale of new farm machinery in 1942. This fall, four regional Extension Service conferences have been held covering all States, and dealing with the problems of farmers arising from War Production Board Limitation Order L-170 and related regulations which have been discussed elsewhere on this program. Briefly, the following equipment problems confront farmers:

#### Scarcity of new machines.

Only one-fifth as much new farm machinery is to be manufactured in 1943 as the average sold in 1940 and 1941. These new machines will be limited principally to farms contributing to the increases in production goals. Materials for new machinery and parts are to be released in limited quarterly allotments to manufacturers.

Rationing of selected items of farm equipment is in effect, and the distribution of such farm equipment is under control.

Rationing also calls for efficient use of all serviceable machinery, the salvaging of useful parts of unserviceable machines, and sharing by exchange of custom use, rental, or joint ownership when feasible. Prospects of scarcity have caused auction sales of used machines to bring prices in excess of ceiling prices for similar new machines. The manufacturing concentration ordered under L-170 also presents uncertainties in distribution of machines and the possibility of some retail outlets and services being closed.

Farm transportation facilities are drastically curtailed and must be conserved.

#### Substitute supply.

Reconditioning provides the most available substitution for new machines. Four-fifths of the machines which farmers will want to buy must be salvaged from machines they would prefer to discard.



Substitute supply (continued)

Dependable reconditioning requires the services of good mechanics in well-equipped shops. Mechanics are scarce. Helpers are needed. Present shop wage limits induce mechanics to leave repair shops to enter war-industry employment.

Farmers often will need to dismantle and reassemble machines to save the time of mechanics and lighten the transportation work.

Home-made equipment using salvaged machine parts or requiring a minimum of critical materials is necessary to meet urgent needs.

Repairs.

Replacement parts are limited to fewer in 1943 than were provided in 1942. Repair stocks held by dealers are also less this fall than last fall.

The concentration of manufacturing under L-170 may present uncertainties in distribution of replacement parts because of dealer business mortality.

Replacement parts should be ordered NOW. The reasons are more urgent than last year.

To avoid omissions, all parts of all farm equipment should be carefully checked before replacement parts are ordered.

Orders should be limited to parts needed for use in 1943, without "hoarding."

Customary replacement repairs should be made early, and the farmers as usual.

Preventive maintenance.

Adjustment and lubrication are fundamental in reconditioning, repair, and care of farm machinery. The high standard of care required to offset the wartime scarcity of machinery is being emphasized as "preventive maintenance." Operating condition, as good as new, is the standard of preventive maintenance needed.

Lubrication in addition to its basic value in efficient operation is now a means of buying in oilcans more hours of farm-machinery use.

Bright surfaces and journals require protection from corrosion.

Painting of machines also has become more important, not only to afford protection, but also to promote the better care which operators give to machines new in appearance.

Shelter not only from sun, rain, and freezing weather, or damage by livestock or carelessness, but also from grit and from exposure of interior wearing surfaces to moisture condensation effects, is also imperative in preventive maintenance.



### Operation.

Many skillful tractor and power-machinery operators have left the farms. Farm operators as well as the new farm laborers--some of them women and youths--will need instruction in operation, lubrication, adjustment, and care of machinery which is now almost irreplaceable.

Accidents and resulting loss of time, equipment, or crops should be avoided in large measure by training operators in skill and safety practices and by dependable preparation of equipment for the work it will be required to do.

Time-saving farming practices for labor and machinery must be given preference.

### Sharing equipment.

Sharing the use of equipment is necessary to enable the available machines to serve the acreage involved in the wartime agricultural production goals.

Exchange of use of machines or labor needs to be increased.

More custom work, especially with tractors and with harvesting machines of all kinds, is needed, and rates charged for services need stabilization.

Rental of machines needs promotion and the determination of fair rates on local bases.

Pooling of some essential equipment or cooperative ownership may need special attention in some circumstances.

Publicly owned tractors and machines adaptable to farm use should be made available for crop production.

The problems confronting farmers in dealing with the scarcity of farm machinery have been listed. A vigorous machinery-conservation program is required to deal with them, but there are brighter aspects which will influence that program favorably.

### Brighter aspects.

The inventory of machines on farms is probably greater than in any previous year.

There are more tractors on farms than at any previous time.

A very large percentage of the machines on farms have been in use less than 5 years.

A large percentage of farm machines have been kept in good condition in 1942.

Excellent repair shop and garage facilities are available throughout



Brighter aspects. (continued)

the country for servicing tractors and doing welding and other difficult repairs .

Most repair shops can still deal effectively with the repair jobs this winter if orders are placed promptly and the work spread over the dormant season before the most stringent manpower demands of 1943 remove too many mechanics, and the rush of farm work returns in the spring, or dealer services decrease.

At the farm level of analysis, each farm is fairly well equipped for most operations in its schedule of production, and most farm managers can make certain that their machines are ready for the 1943 work.

Sharing labor and equipment and doing custom work is not only neighborly, but during the war it is also patriotic and should be profitable. The resourcefulness, ingenuity, and self-reliance of American farmers are reasserting themselves with wartime vigor in the development of home-made farm equipment from power sweep rakes and portable grain elevators to hand-operated peanut pickers, and in the conversion of machines to new uses such as the spectacularly successful use of spray machines to extinguish farm fires.

Farm commodity prices and farm wages are expected to receive corrective adjustment soon.

The President's Executive order of December 6 delegating authority with respect to the Nation's food program greatly strengthens that program. As we examine this list of problems and encouraging aspects of the equipment conservation program, we should observe that farmers can receive aid on the farm front from many sources. Coordination of mutual cooperation by public agencies and private enterprise should be encouraged and facilitated at national, State, and county levels, and should be maintained as long as the needs of farmers are best served by concerted programs. People working for the same end can accomplish most by mutual understanding and effort.

The Secretary of Agriculture invoked this principle in the organization of the United States Department of Agriculture war boards through which the war work of the field agencies of the Department is coordinated at national, State, and county levels in programs of food production and the provision of the essential farm necessities for that end. Rationing of farm machinery is an unpleasant war task essential to fortifying the food front. The general maintenance of the inventory of farm equipment is also a responsibility inseparable from production. Hence, the war boards are also concerned with aiding producers to maintain their equipment.

The Extension Service has membership in all United States Department of Agriculture war boards and undertakes the educational function in war tasks of the Department. Extension workers realize the urgency of educational effort and cooperation in the Nation-wide equipment conservation program and will do all they can to aid the farmers and all who help to supply farm needs.



Food is a weapon. Agricultural engineers associated in any connection with providing or maintaining the equipment for agricultural production can do much to preserve for the food front an effective service of supply. The farm equipment trade is performing that service. Many engineers in both public work and private enterprise can aid in conserving the usefulness of this service for farmers and in promoting preventive maintenance and other wise aiding farmers to use farm equipment most effectively. Let us continue our collaboration to assure by every effective means the conservation of farm equipment

